TEXAS NATURAL RESOURCE CONSERVATION COMMISSION
WATER QUANTITY DIVISION
CONSTRUCTION PROGRESS REPORT

GENERAL INFORMATION

INVENTORY NO. TX-3757 WATER RIGHT AUTHORIZATION A-2302 / P-2076

DAM Lake Galahad Dam

OWNER Ivanhoe Property Owners Improvement Association (IPOIA)

STREAM Magnus Branch

BASIN Neches River COUNTY Tyler

GENERAL LOCATION 6.0 miles south of Woodville, Texas

DAM HEIGHT 12.5 FT. DOWNSTREAM HAZARD [redacted]

NORMAL CAPACITY 268. A.F. MAXIMUM CAPACITY 730. A.F.

EVALUATION DATE May 6, 1997

PREVIOUS EVALUATION DATE October 26, 1997

NORMAL WATER LEVEL : Empty. Lake modified to be a low water crossing.
CURRENT WATER LEVEL: Empty

INSPECTION BY

Richard Dee Purkeypile, P.E., TNRCC Dam Safety Team
David Zwernemann, P.E., TNRCC Dam Safety Team

SUMMARY

Work was nearing completion on the emergency modification of Lake Galahad Dam. The dam will essentially act as a low water crossing. The lake will remain empty with all normal flows being discharged through four 8-foot diameter culverts (steel tank cars). The dam will provide access to residences during most storm events. However, the dam is expected to be overtopped and possibly wash out during a large storm event.

BACKGROUND

The City of Woodville and the surrounding area, which includes Lake Galahad Dam, experienced approximately 16 inches of rain in a 24-hour period on September 27, 1996. The Texas Forest Service office located in the City of Woodville, reported a peak intensity of 15-inches of rain in a 4-hour period. Ten dams in the Magnus Branch watershed overtopped and failed due to this intense storm event. Several other dams were damaged by erosion due to overtopping. Lake Galahad Dam overtopped and failed during the flood event.

The Ivanhoe Property Owners Improvement Association (IPOIA) received a $350,000 Disaster Relief Grant awarded through the Texas Department of Housing and Community Affairs through the Community Development Block Grant Program of the U.S.Department of Housing and Urban Development. The grant provided funding for the emergency repair of Lake Tristan Dam and for the construction of a low water crossing for Lake Galahad Dam which had overtopped and failed during the September 1996 flood. Both of these dams are used as the primary access for many residents in the subdivision.

CURRENT INSPECTION

The inspectors were met on-site by representatives of the IPOIA, the owner's engineer, Wayne Stolz, P.E., with Everett Griffith, Jr., and Associates, Inc., and Mr. Jeff Reed, with State Senator Drew Nixon's office.

The modification of the dam into a low water crossing has nearly been completed. The blacktop road has not yet been placed on the dam crest. The traffic guard rails have not been installed across the culvert section.

Four 8-foot diameter steel pipe culverts (forty-foot long tank cars) have been installed under the roadway. Large creosoted timbers have been installed as bulkheads at both the inlet and the outlet of the culverts. Large creosoted telephone poles have been placed to hold the timbers in place and to help anchor the entire spillway section. Large rock rubble has been placed in the approach and exit channels in an effort to protect the culverts from erosive flows. This spillway is expected to accommodate the normal spring flow and rainfall runoff from small flood events. Larger flood events will start to overtop the dam at the new four culvert section of the dam which is approximately 2.5-feet lower than the main embankment.

The downstream slope of the dam has been regraded to a 3 to 1 slope. No vegetation has been established on the embankment slopes yet.

The lake will be kept empty until the IPOIA obtains funding to properly rebuild Lake Galahad Dam.

HAZARD CLASSIFICATION / HYDRAULIC REVIEW

Before Lake Galahad Dam failed it was considered to be a small-sized, [redacted] dam. Since the dam is being rebuilt as a low water crossing and is intended to wash out when overtopped, the dam is currently considered to be hydraulically adequate, until or unless the dam is rebuilt.

The IPOIA has indicated that they would like to modify the low water crossing to reestablish the original normal lake elevation. Any plans to modify the low water crossing should be submitted to this office for review and approval prior to commencement of construction.

ATTACHMENTS

Include with this report are the following: photographs, a sketch of the dam showing photo locations, a topographic map, and a location map.

Richard Dee Purkeypile
Richard Dee Purkeypile, P. E.

6-5-98
Report Date

David Zwernemann, P. E.

Photo No.1: This panoramic view of the dam shows that the dam has been modified to act as a low water crossing. The main embankment has been lowered by approximately 5-feet. The main embankment will be lower than the old emergency spillway crest. The section of the embankment over the culverts will be approximately 2.5-feet lower than the main embankment. Note the telephone poles that were used to anchor the culverts.

Lake Galahad Dam
TX-3757

IPOIA
May 6, 1997

Photo No.2: This closeup of the culverts shows the large rock that has been placed near the inlet to help reduce the effects of erosion. Note the creosoted timber head wall and telephone pole anchoring. Each culvert has been tied together with welded pipes.

Photo No.3: The downstream discharge outlet for the culverts appears to be identical to the upstream inlet area.

Lake Galahad Dam
TX-3757

IPOIA
May 6, 1997

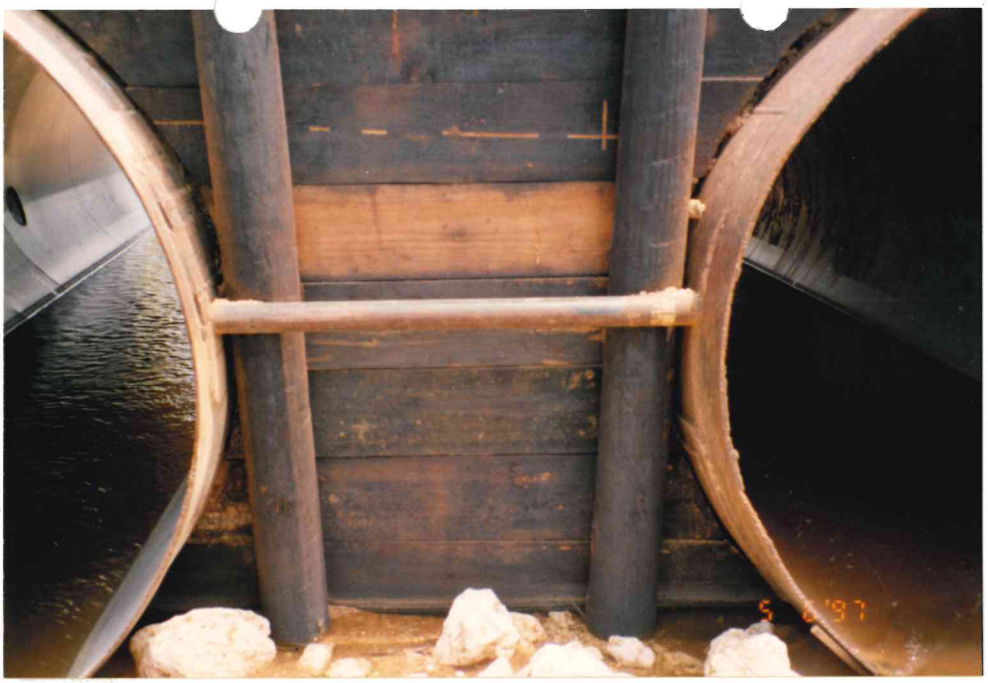
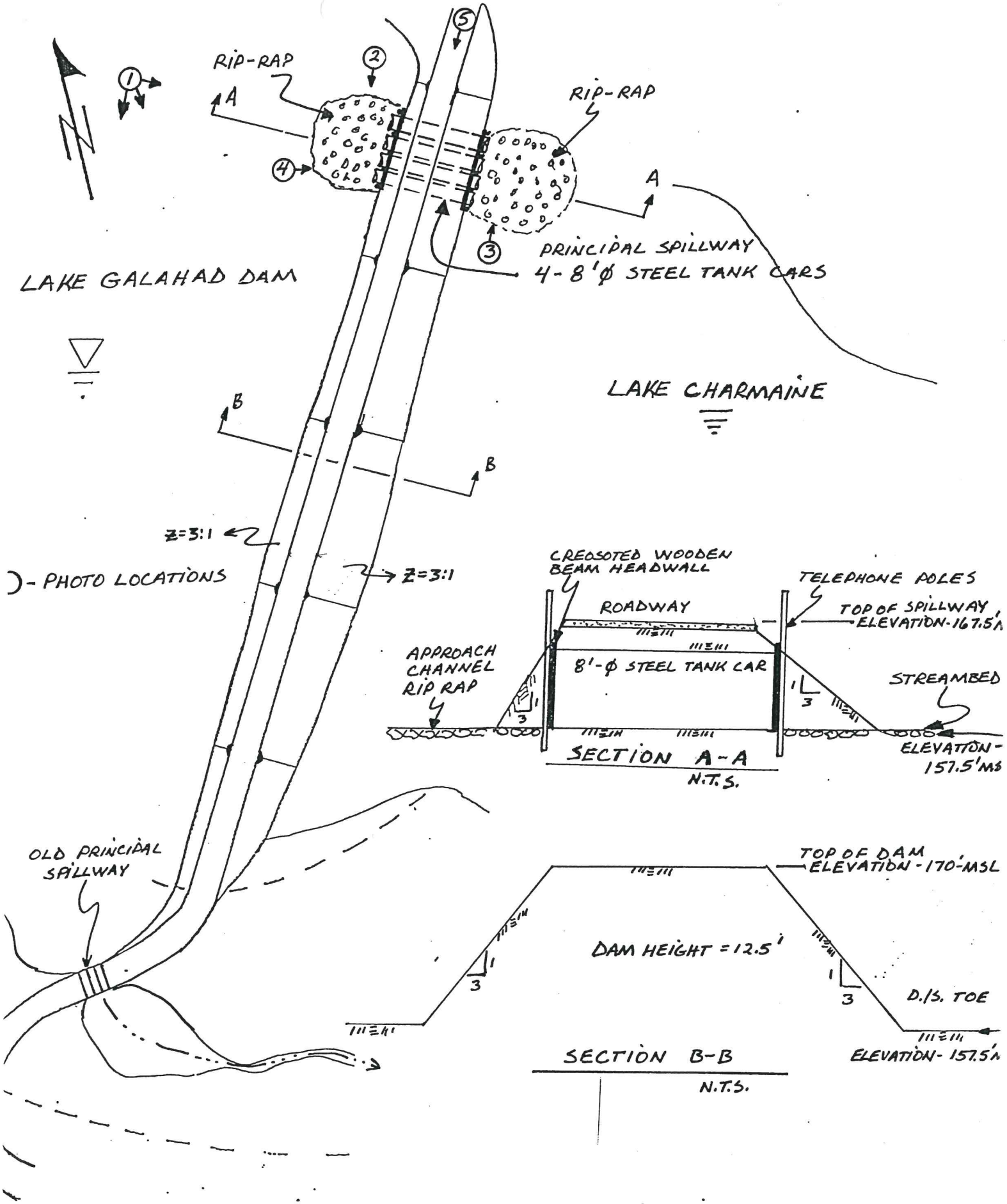


Photo No.4: A closeup of the head wall and anchoring system which was used for the culverts. Note the welded pipe that attaches to each culvert.

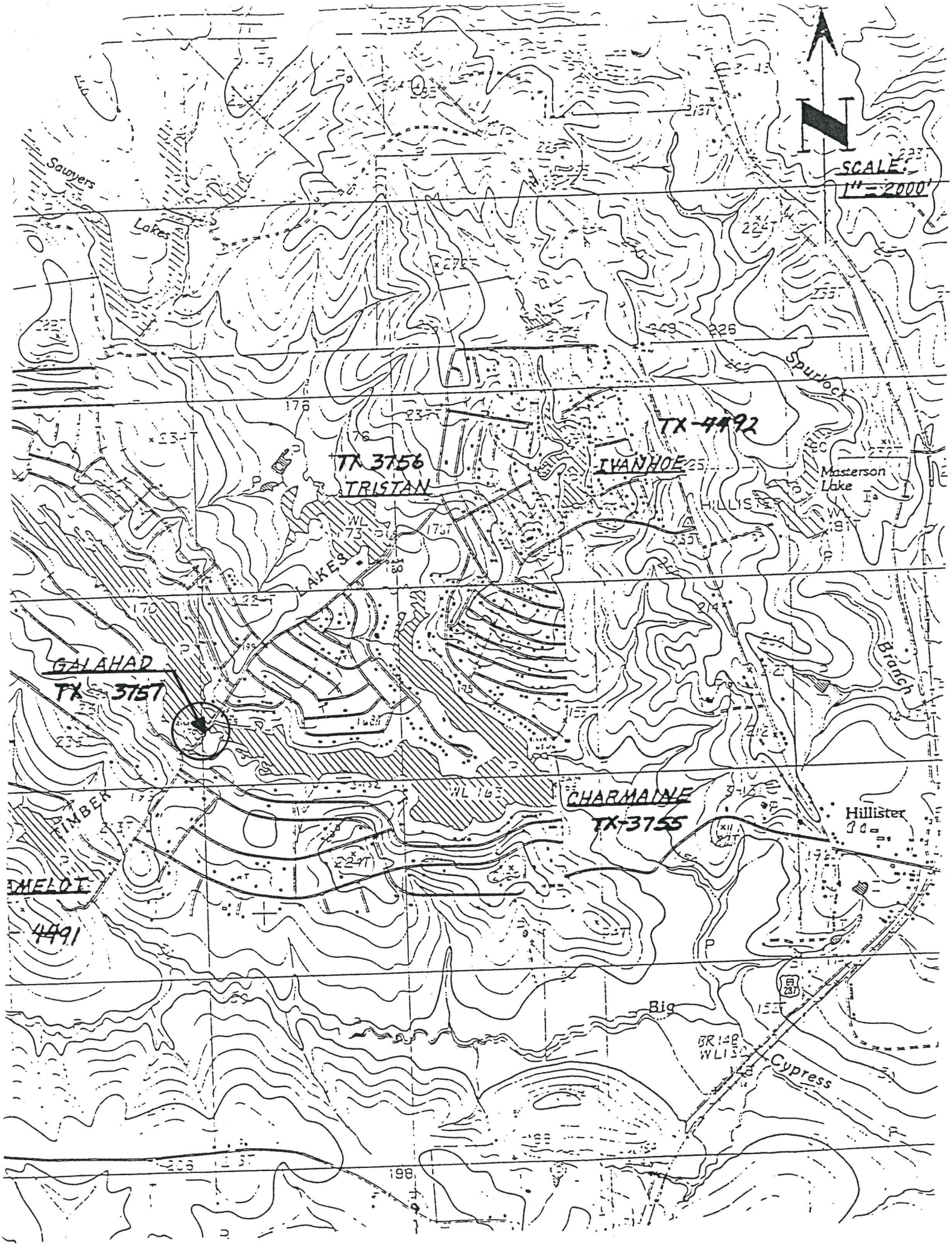
Photo No.5: View of the crest of the modified dam as seen from the left abutment. Note the flat slopes. The blacktop road way has not yet been applied.

Lake Galahad Dam IPOIA
TX-3757 May 6, 1997



LAKE GALAHAD DAM
TX-3757

IPOIA
MAY 6, 1997


SCALE
1" = 2000'
Sawyers
Lakes
Spurlock
TX-4492
TX-3756
TRISTAN
IVANHOE
Masterson
Lake
HILLISTER
LAKES
GALAHAD
TX-3757
CHARMAINE
TX-3755
Hillister
TIMBER
MELOT
4491
Big
Cypress
Branch
BR 148
WL 163